

Proceedings

Eleventh International Conference

**DATA
ENGINEERING**

March 6 – 10, 1995

Taipei, Taiwan



IEEE Computer Society Press
Los Alamitos, California

Proceedings of the

**Eleventh International Conference
on
DATA ENGINEERING**



DATA ENGINEERING

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BY THE EXPERTS

Proceedings of the

Eleventh International Conference on DATA ENGINEERING

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Taipei, Taiwan

Edited by
P.S. Yu
A.L.P. Chen

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General Chairs' Message

Welcome to Taipei and the eleventh International Conference on Data Engineering. This is the second time this conference is being held in Asia since its inception in 1984. We thank the steering committee for the decision to run the conference here, and hope all of you to find this capital city full of exciting events, including fabulous Chinese art treasure exhibitions and fascinating night markets.

To keep its tradition as a conference of high quality, the Program Co-Chairs, Dr. Philip S. Yu and Prof. Arbee L.P. Chen, and the program committee members have done a great job with the difficult reviewing process. The keynote speeches by Prof. Hector Garcia-Molina and Dr. Won Kim will definitely bring the conference attendants up-to-date messages on the future of database research and development. Their efforts are greatly appreciated.

We thank all the sponsors who generously support this conference, especially the IEEE Computer Society and its Technical Committee on Data Engineering, the Ministry of Education and the National Science Council of the Republic of China, and the local organizing staffs of the National Tsing Hua University. Finally, enjoy your stay at the beautiful Grand Hotel, and the forums provided in the conference.

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Program Chairs' Message

The 11th ICDE continues to provide a popular forum for presentation of research results and discussion of issues on data engineering. This year, 233 papers from 22 countries were submitted for consideration. The quality of the papers was excellent. Due to limited space, the program committee had to apply stringent quality criteria and selected 56 papers for publication. Besides the scientific program, there are four industrial sessions, four panels and eight tutorials.

This year we are privileged to have two outstanding keynote speakers: Prof. Hector Garcia-Molina of Stanford University, renowned for his contributions to transaction processing and digital library research; and Dr. Won Kim, of UniSQL, a successful entrepreneur who has made fundamental contributions to object-oriented databases.

It was our great honor and pleasure to accept the responsibilities and challenges of being Program Chairs. We have made our best effort to continue the tradition of excellence in ICDE. The program committee was divided into 11 areas: object-oriented databases; AI, knowledge-based systems and deductive databases; engineering and scientific databases; database design and modeling; heterogeneous systems and interoperability; transaction management and real-time databases; performance evaluation; high-performance and parallel systems; access methods and query optimization; extensible, temporal, spatial and active databases; and data consistency, integrity and security. We would like to acknowledge the superb job done by the 11 vice-chairs: Kyu-Young Whang, JiaWei Han, Margret Eich, Gunter Schlageter, Calton Pu, Krithi Ramamritham, Gerhard Weikum, Masaru Kitsuregawa, David Lomet, H.V. Jagadish, and Chin-Chen Chang. In addition, the 65 members of the program committee and 140 additional reviewers deserve our thanks. With their help, we were able to provide at least three reviews for each paper.

We would like to express our gratitude to the General Chairs of this conference, Prof. R.C.T. Lee and Prof. C.V. Ramamoorthy, for their support. In addition, our thanks go to Ahmed Elmagarmid and Omran Bukhres for putting together the Industrial sessions, Maria Zemankova for organizing the Panel sessions, and Yao-Nan Lien for arranging the Tutorial sessions. We also thank Elisa Betino, our European Coordinator; Makoto Takizawa and Mike Papazoglou, our Far East Coordinators; Abdelsalam Helal and Chiang Lee, our Publicity Chairs; Steve Y.L. Lin and Jeffrey Tsai, our Financial Chairs; and Allen Wu, our Local Arrangement Chair. Last, but not the least, we would like to express our appreciation for the ICDE Steering Committee, especially to Benjamin Wah for his helpful advice and Ming T. (Mike) Liu for getting the conference to Taiwan.

Special thanks go to Kun-Lung Wu, our Publication Chair. In addition to handling publication, he has spent enormous amounts of time developing programs to automate the various tasks associated with the review process, and keeping track of the papers and the reviews.

Finally, we would like to thank you, the participants, for your attendance and hope that you will enjoy this conference.

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